The New Jersey Department of Environmental Protection
Innovative Environmental Technology Certification
of the
New Jersey-Corporation for Advanced Technologies
Verification of the Performance Claims and Regulatory Determinations

United Retek of New Jersey LLC

The New Jersey Department of Environmental Protection (NJDEP) specifically the following programs:

1. Office of Innovative Technology and Market Development (OITMD) Division of Science and Research (DSR);

2. Bureau of Environmental Evaluation and Risk Assessment (BEERA) Division of Publicly Funded Site Remediation (DPFSR); and

3. Bureau of Resource Recover and Technical Services (BRRTS) Division of Solid and Hazardous Waste (DSHW)

assisted in the development of the structure of the performance claims with the New Jersey Corporation for Advanced Technology (NJCAT) evaluation team members and Retek to facilitate consistency with NJDEP's regulatory determinations. The Department also evaluated the final report to determine its overall conformance to the verification/certification process for innovative environmental technologies currently being developed by OITMD. The evaluation served as a technical review for finalizing the NJDEP certification pathway for IETs. The Department finds the following conditions exist:

1. The sampling and analytical plans for the Retek projects evaluated by NJCAT for the Retek verification were developed in accordance with acceptable methods and procedures. The data was collected on each project to document performance by Retek. The samples were analyzed by state certified laboratories independent of United Retek. The data was evaluated in accordance with established quality assurance project plan (QAPP) method. State environmental agencies specifically NJDEP, NYDEC and MADEP, RIDEM, NADES and CTDEP reviewed and/or approved the QAPPs and the sampling and analytical plans'.

2. Given the nature of the technology, the NJCAT verification report did not evaluate the technology under the full range of operations (minimum, average and maximum conditions) to document the areas where the technology can function or operate and the outside limits/boundary conditions. However, the verification establish the boundary conditions of the United Retek process as follows:

   a. Onsite reuse of petroleum contaminated soils from fuel products less than 30,000mg/kgTPH and individual TCLP organic below regulatory thresholds (average values below the-80% one tail confidence interval) as paving base and curbing base

material'.

b. Onsite reuse of lead contaminated soils as an effective demonstration of the stabilization and solidification process.

3. The NJCAT verification serves as a full third party audit of the performance of the Retek process. However, the data was developed through in-house collection and sampling; and independent laboratory analysis. The performance data was verified by NJCAT based on in-house validation of the sampling and analytical data.

4. The NJCAT report verifies that the technology can perform within acceptable limits for the following:

a. TPH contaminated soils that range from 100 mg/kg to up to 350,000 mg/kg.
b. Lead contaminated soils that range from less then 1 mg/1 to greater then 100 mg/l.

However, the NJCAT verification report indicates data was not available (because it is not routinely or regulatorily required) of the technology's performance before and after treatment just that the final product can meet TCLP regulatory thresholds for organics and lead within the boundary conditions established in the report. Further, engineering data on the performance of the product was not available. The NJCAT report limits the verification to on-site use of the contaminated soils for subbase parking and curbing material.

5. Based on the NJCAT verification, the overall net beneficial effect of the Retek process is positive. The TPH contaminated soils are "locked" up within an asphalt matrix and generally unavailable to the environment and subsequently not available to direct exposure. Further, unlike a hot mix asphalt, the emissions, additional VOCs and particulates are minimized. The United Retek cold asphalt emulsion mix eliminates the particulate and VOC emissions from the air dryer of a hot mix asphalt plant and minimizing the fugitive emissions from subsequent material handling operations.

The NJCAT report did not provide an overall mass balance as required in the NJDEP certification however, the evaluation did demonstrate, in terms of the lead, the technology is effective in stabilizing the lead in-situ. While stabilization reduces it environmental availability it is not an overall treatment or removal of the lead. The stabilization renders the lead environmentally unavailable.

6. This technology can assist in the advancement of the following milestones and strategic actions as set forth in the Department's Strategic Plan:

C. Safe and Healthy Community

The remediation of hazardous discharge sites will be accelerated, especially in urban areas throughout the State.

Exposure to environmental risks will be controlled and minimized.

D. Healthy Ecosystems

Pursue partnership or other agreements with outside parties to promote protection and preservation of ecosystems.

E. Open and Effective Government

Develop and implement an integrated information infrastructure that will provide all internal and external constituents with easy and effective access to information and that fosters the best administrative and environmental decision making.

Encourage industry to voluntarily reduce risk and implement pollution prevention efforts.

Develop and implement holistic approaches to facility environmental management.

7. Attachment A can be utilized as a Tier 3 template as defined in the "Reciprocal State Acceptance of Environmental Technologies"- Final Report prepared by the member states of the 6- State MOU pilot project, Nov 1998, for any subsequent on-site remediation approvals for beneficial use of TPH and lead contaminated soils through the interstate reciprocal technology and regulatory acceptance process[3].

Michael Winka, Administrator
Division of Science and Research
Office of Innovative Technology and Market Development

Nov 10, 1998
DATE

1. ***The state environmental agencies and the state's review programs are those defined in the NJCAT Technology Verification - United Retek of America, LLC, October 1998.***

2. ***Fuel products are defined in the NJCAT Technology Verification to include but not limited to the following: gasoline; fuel oils including numbers 2, 4, and 6 fuel oils; kerosene; diesel fuels; and jet fuels. This does not include waste oil.***

3. ***This tier 3 template is general and inclusive guidance for site-specific subsequent interstate approval based on the NJDEP certification and NJCA T verification and may not be applicable or appropriate in all states. States should modify these conditions as appropriate to be state specific.***